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E-Content [All Things Digital]

The Role of Subsidy in Scholarly Communication

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Scholarly communication is being disrupted. As I have argued elsewhere, open-access journals are a *disruptive innovation* as Clayton Christensen would use the term.¹ But the Internet and related digital technologies open an opportunity for all forms of scholarly communication to be disrupted. These disruptive innovations will make the vehicles for communicating scholarship faster, easier, and cheaper. Though it is not clear which business models will support these innovative ventures, it *is* clear that many of the established scholarly communication players are becoming obsolete – or, at a minimum, their roles are diminishing. As this change plays out, established institutions and firms will battle to preserve their roles and also the dollars they extract from the system while new entrants will struggle to find the resources they need even if the products and services they offer are superior.

Without a clear understanding of the nature of scholarly communication, we will not be able to create the new tools and new economic models necessary to adapt to the radical changes in technology. Those of us who hope to shape what scholarly communication will become need to understand that scholarly communication, like the larger research enterprise, is a public good and that, as such, it requires subsidy to maximize its benefit. Subsidy exists in the established system, but we often do not see it because the channels the subsidy travels are long-standing and familiar. As we consider new mechanisms for scholarly communication, we need to look carefully at the established system. We need to follow the money and see where it goes, determine the value provided by those who take the subsidy, and decide whether there are cheaper or better means for providing that value. Changing how this subsidy is channeled will be one of the most important moves we can make in creating new business models for the distribution of scholarly content.

Once we understand that it is subsidy that drives the economics of scholarly communication, several things become clear:

1. The subsidy exists because we all provide it. It is a community resource. Our institutions, mostly governments and foundations, collect the subsidy and redistribute it in ways that attempt to maximize a benefit that would not otherwise be maximized. Those who argue the inappropriateness of governments insisting on public access or openness are missing this point. It is quite reasonable for governments – and other institutions that manage common resources, like universities and foundations – to establish the means by which the subsidy they provide is channeled. Although the established system of scholarly communication uses some market mechanisms, the subsidy is not provided to maintain private commercial enterprises. Rather, it is provided to make research results available as easily and as broadly as possible.

2. As we change the system, we need to both reduce exploitation by those who would extract monopolistic rents from it and eliminate those parts that are inefficient. We need to restrict greed and outdated, ineffective practice. The established mechanisms of scholarly communication have some of each, and we must work to eliminate both.
3. The way in which subsidy is used creates incentives for the various participants in the scholarly communication process. As we redesign the system and rechannel the subsidy, we must create incentives that will motivate scholars to create and disseminate their work in ways that ensure it has the largest possible societal impact at the least cost.

In the established scholarly communications system, the majority of the subsidy flows from governments and foundations to college and university libraries and from libraries to publishers. There are other contributors to the system, but most of the money flows through this channel. In a paper-based system, this was a good arrangement, at least until some publishers realized that their journals were monopoly goods and that they could extract excessive monopoly rents from libraries. In some cases, these publishers were scholarly societies that used this excess subsidy to lessen membership dues and enhance their programs – a practice that, it could be argued, contributed to the scholarly enterprise. In other cases, the publishers were for-profit corporations, and the subsidy they extracted as excess monopolistic rents was paid to shareholders outside the scholarly ecosystem. It is less clear that this was an appropriate use of the subsidy.² Regardless of the motive, the result was subsidy being pulled out of the system.

The paper-based system was also expensive and contained numerous inefficiencies, many of which persist. Much of the subsidy went to running libraries. Managing paper is not easy or cheap, and since library size contributed to institutional status, research libraries had little incentive to collaborate to

create a well-coordinated system. In today's largely digital world, these legacy practices are an increasingly unaffordable overhead in the system.

Although there is significant concern about how to sustain open access and how to preserve monographic publishing in the face of declining sales for academic books, the simple fact is that the money exists. There is sufficient subsidy in the system. The challenge is in moving the subsidy around. First, the subsidy needs to be taken from someone who will not want to give it up. Then, a new system with appropriate incentives will need to be devised. In most cases, the end of the process is easy to imagine, but how to get from here to there is not at all clear. To take one example, if all scholarly journals were "gold" open access – that is, all of the articles are available at the time of publication – everyone would have access to all of the world's scholarly journal articles for free, and libraries would no longer need to pay for journals. Universities could then channel the money that was once spent on the purchase of subscription journals to fees for article processing or to direct subsidies for open-access journals published by their university presses. But as demonstrated by the recent debates in the United Kingdom over the Finch Report (<http://www.researchinfonet.org/publish/finch/>) and how government funding should support the publication of research results, deciding on the path to reach this end can be quite contentious.

We know some things work. Funders' mandates for the deposit of manuscripts work, especially in disciplines like medicine, where the value of the content to the general public is great. The traffic on PubMed Central (PMC, <http://www.ncbi.nlm.nih.gov/pmc/>) clearly demonstrates that subsidizing a centralized digital repository is vastly more effective than the services that established libraries can offer. ArXiv (<http://arxiv.org/>) shows that scholar-to-scholar communication can be similarly more effective at world scale. We know that the Public Library of Science (PLOS, <http://www.plos.org/about/>) can publish well-respected open-access journals for a bit more than \$1,000 an article.³ We also know that article-processing fees are a good funding mechanism when

the fees are small compared with the overall cost of the research project and when the fees can be paid by the grants that fund the research.

We also know some things don't work. For example, channeling the subsidy to historians through their salary is not the best way to encourage author-pay models in the humanities. I would also argue that hybrid open access, which doesn't change the business model, is not an efficient long-term solution. It is certainly the case that the article-processing fee model has spawned some bottom-feeders. Finally, digitizing specialized scholarly books and selling them in large blocks, as was done with the University Press Content Consortium (UPCC) on Project MUSE (<http://muse.jhu.edu/about/UPCC.html>), appears to be a limited success at best.

Librarians, publishers, and scholars face many challenges as the scholarly communication system is reshaped, but one fact should provide hope: lack of money is not the problem. The money to do what is required exists in the system. The disruptive new systems will be cheaper than what we have today, which is based on practices and institutions designed around paper, printing, and the post office. The problem is that all of this money is committed to the old system. Libraries continue to build large book collections and subscribe to as many journals as possible. Even as research libraries profess to hate the "big deal" with large commercial journal publishers, there were more such deals in 2012 than there were in 2006.⁴

The challenge is to abandon what we have done in the past and commit to the future. Our legacy practices all have opportunity costs, and the opportunity we are forgoing is the possibility of devising a faster, cheaper, and easier scholarly communication system. If we can clearly see what is at stake and realize the considerable resources that are at our disposal, we will find ways to create the future.

Notes

1. David W. Lewis, "The Inevitability of Open Access," *College & Research Libraries*, vol. 73, no. 5, pp. 493–506 (September 2012), <http://crl.acrl.org/content/73/5/493.full.pdf+html>.

2. Jean-Claude Guédon provides the best telling of the story of how this came to pass: *In Oldenburg's Long Shadow: Librarians, Research Scientists, Publishers, and the Control of Scientific Publishing* (Washington, D.C.: Association of Research Libraries, 2001).

3. PLOS expenditures, as reported on its 2011 financial disclosure form (IRS Form 990, http://www.plos.org/wp-content/uploads/2012/10/2011-Public_Disclosure.pdf), were \$18.3 million, and it published 16,263 articles in 2011, for a per-article cost of \$1,128. (Article count based on a date search of the PLOS website.)

4. Karla L. Strieb and Julia C. Blixrud, "The State of Large Publisher Bundles in 2012," pre-publication version, *Research Library Issues*, no. 282 (Spring 2013), <http://publications.arl.org/rli282/1>.